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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,111	07/11/2003	James D.B. Smith	2003P08574US	4106

7590 08/04/2005

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, NJ 08830

EXAMINER

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/618,111

Applicant(s)

SMITH, JAMES D.B.

Examiner

Michael J. Feely

Art Unit

1712

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 19 July 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

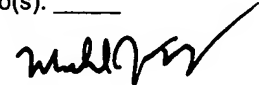
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: _____.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attachment.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.
13. ☐ Other: _____.


Michael J. Feely
Primary Examiner
Art Unit: 1712

ADVISORY ACTION

Pending Claims

Claims 1-19 are pending.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-9 and 11-19 ***remain rejected*** under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US Pat. No. 5,904,984) in view of Cook et al. (US Pat. No. 6,369,183).
3. Claim 10 ***remains rejected*** under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US Pat. No. 5,904,984) and Cook et al. (US Pat. No. 6,369,183) in view of Stackhouse et al. (US Pat. No. 4,427,740).

Response to Arguments

4. Applicant's arguments filed July 19, 2005 have been fully considered but they are not persuasive. The Applicant has argued the prior art rejection on two fronts:

- ***Examiner's citing of the omnibus phrase in Cook '183 as being valid and irrefutable is a mischaracterization of the overly-broad statement.***

Applicant argues:

(a) "Certainly any commercially available resin can't be substituted, and Cook '183 simply can't be enabling for every commercially available resin just by making this broad statement. And *even* if one were to assume Cook '183 can be combined with Smith '984, the combination would produce a resin without the crystalline structure of the LCT resin presently

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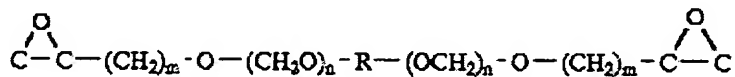
claimed (and without the thermal property limitations added to the claims in the last amendment that reflected this). “The disclosure in an assertedly anticipated reference must provide an enabling disclosure of the desired subject matter; mere naming or description of the subject matter is insufficient, if it cannot be produced without undue experimentation,” – *Elan Pharm., Inc. v. Mayo Foundation for Medical and Education Research*, 346 F.3d 1051, 1054, 68 USPQ2d 1373, 1376 (Fed. Cir. 2003), *MPEP 2121.01*...

(b) In addition to that, the LCT were not commercially available at the time of Cook ‘183 and therefore, even if the omnibus assertion in Cook ‘183 was accurate at the time it was made, it still does not apply to LCT resins.”

In response to (a):

Firstly, this is not an *anticipatory* rejection; rather, it is an obviousness rejection. Secondly, Applicant does not say *why* any commercially available resin can’t be substituted and *why* any commercially available resin simply can’t be enabling. Applicant also fails to demonstrate *how* and *why* the combined teachings of Cook and Smith would produce “a resin without the crystalline structure of the LCT resin presently claimed”.

Smith et al. disclose an epoxy resin of the following formula:



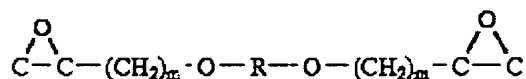
wherein: m is an integer of 1–20;

n is an integer of 0–20; and

R is a mesogen selected from the set consisting of (a)–(p)

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Furthermore, when n is 0, the structure looks like this:

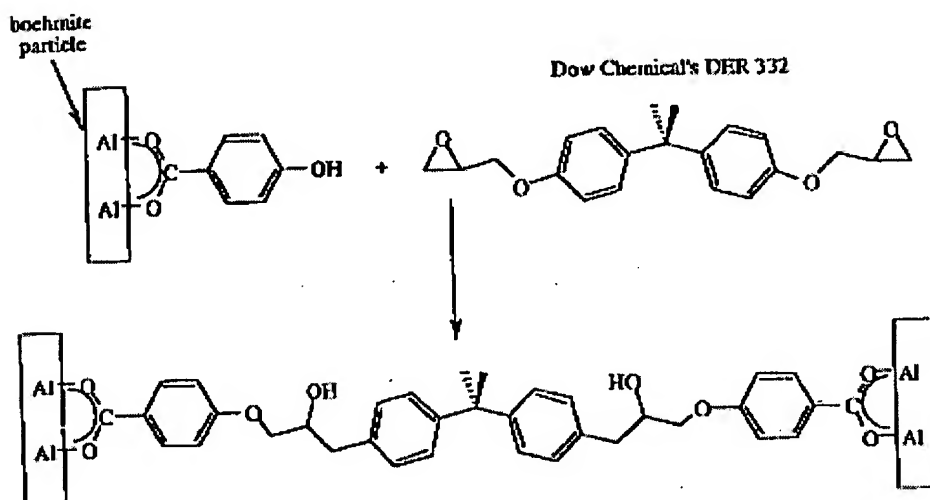


wherein: m is an integer of 1–20;

n is an integer of 0–20; and

R is a mesogen selected from the set consisting of (a)–(p)

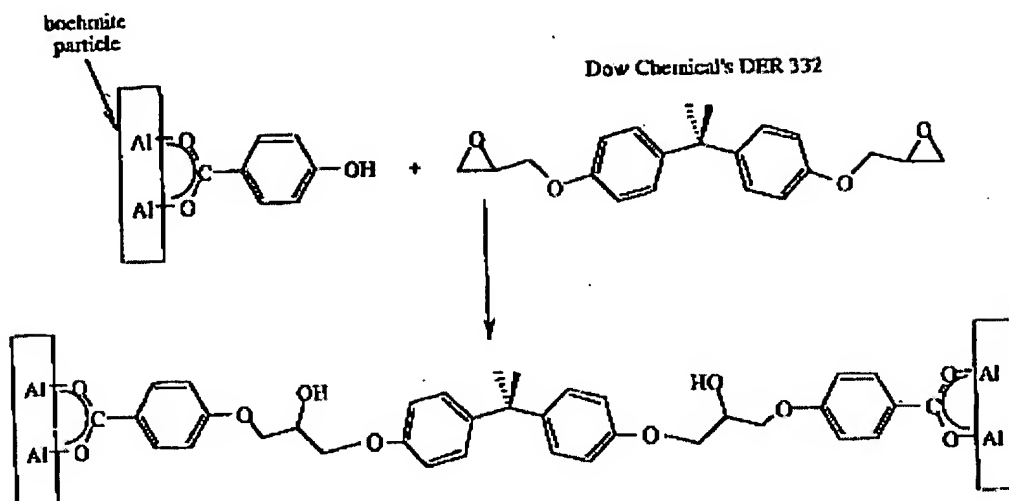
Cook et al. disclose a caboxylate-alumoxane/epoxy hybrid material formed from the following reaction (*also see Figure 10*):



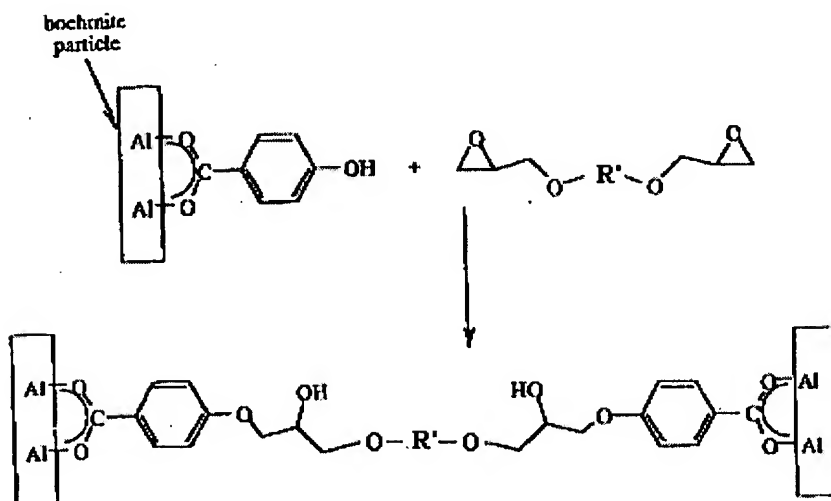
wherein R' is a bivalent skeletal structure.

It should be noted that reaction mechanism presented by Cook et al. is slightly flawed in that they fail to account for the oxygen atoms bound directly to the bisphenol group after the ring-opening reaction takes place – the reaction is not atomically balanced. One skilled in the art would have recognized that these oxygen atoms do not participate in the ring opening reaction. Hence, the following would more accurately represent the reaction mechanism of Cook et al. :

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This can be represented in a more generic fashion as follows:

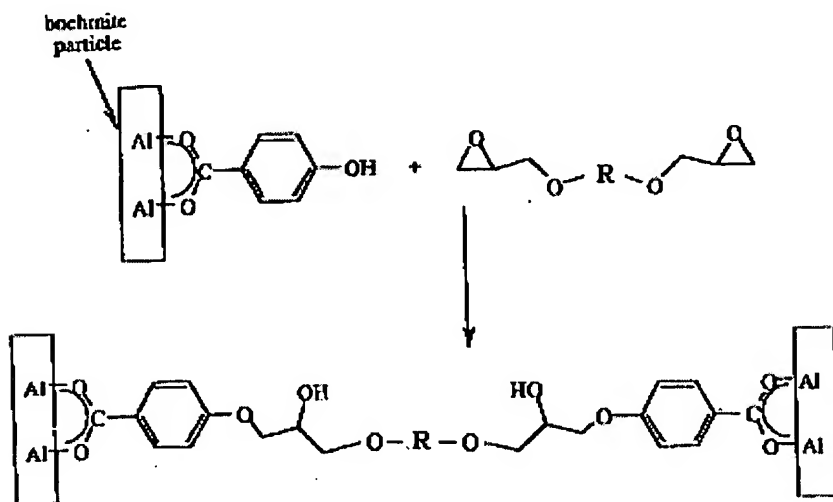


wherein R' is a bivalent skeletal structure.

Turning to the instant invention, Applicant discloses a very similar hybrid material wherein carboxylate-alumoxanes are reacted with a "LCT-epoxy" resin (*see paragraphs 0034-0035*). In their example, they use a biphenol LCT-epoxy; however, they disclose that Examples of other LCT's can be found in US Pat. No. 5,904,984, *which is Smith et al.* The reaction mechanism of

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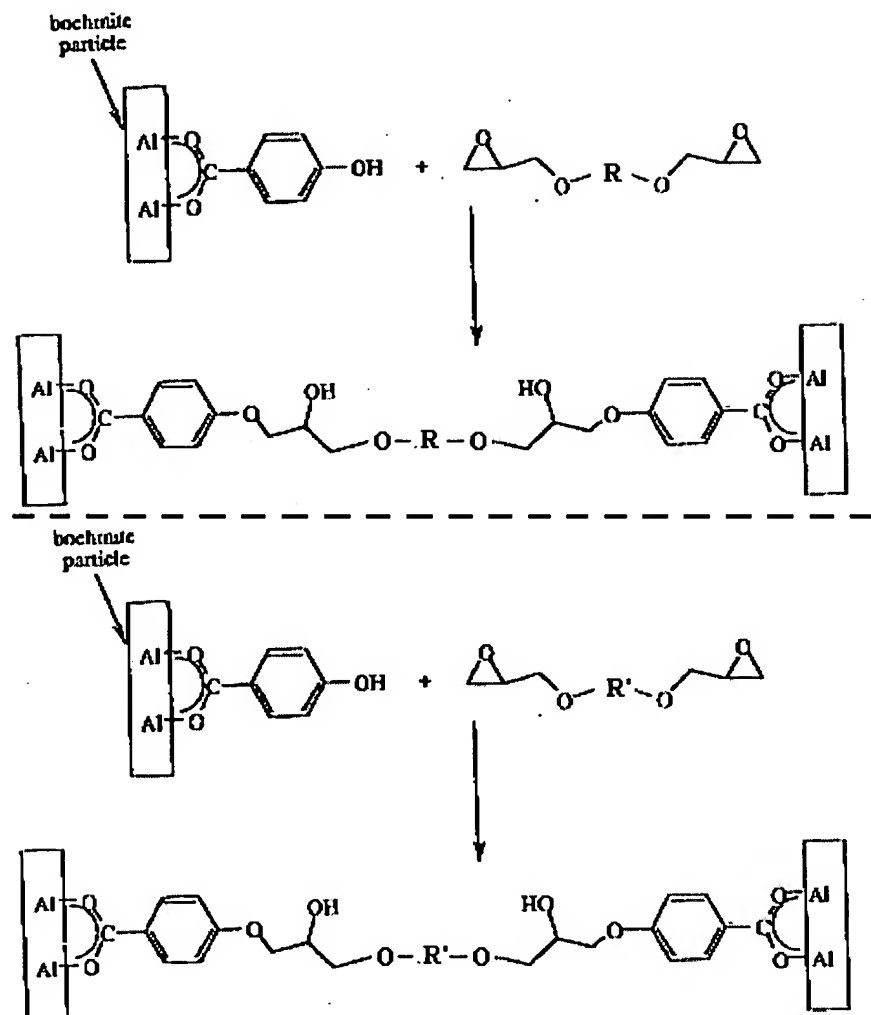
the instant invention involves reacting two carboxylate-alumoxanes and an "LCT-epoxy" resin of Smith et al. Therefore, in its simplest form ($n=0$, $m=1$), the instant invention is formed by the following reaction mechanism:



wherein R is a bivalent mesogen skeletal structure.

The following is a side-by-side comparison of the reaction mechanism of the instant invention (top) and the reaction mechanism of Cook et al. (bottom). The only difference here is the presence of R (bivalent mesogen skeletal structure) vs. the presence of R' (bivalent generic skeletal structure). The foundation of the obviousness rejection is based on this similarity. It is further supported by the fact that Cook et al. extends their reaction mechanism to include *any commercially available epoxy resin*, and that their hybrid materials are used as an alternative to adding fillers.

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In other words, Cook et al. teach the same reaction mechanism, except that they do not explicitly disclose the use of mesogen-containing epoxy resins. Based on the extended teachings of Cook et al. it would have been obvious to substitute the generic diepoxide resin with mesogen-containing diepoxide resins, such as those taught by Smith et al., because the skeleton structure appears to have no impact on the reaction mechanism. Such a substitution would have yielded the exact same reaction mechanism of the instant invention (*see above and paragraphs 0034-0035 of the specification*). Furthermore, it has been found that a chemical and its properties are

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inseparable. In light of this, the claimed properties would have been an inherent result of these combined teachings.

In response to (b):

An obviousness determination is based on what is available to the skilled artisan at the time of the instantly claimed invention. Although there is no evidence of such a claim, Applicant claims that the LCT-epoxies of Smith et al. were not commercially available at the time of the Cook et al. reference. Regardless of whether this is true or false, the fact is that the Smith et al. reference was published almost three years prior to the Cook et al. reference. Both references would have been available to the Applicant at the time of the invention. At that time, a skilled artisan would have been able to obviously combine these teachings to extend the hybrid materials of Cook et al. to include epoxy resins having mesogen skeletal structures.

- *The other issue at hand is the argument that the Examiner has characterized the LCT resin of Smith '984 contrary to how the inventor of the '984 reference has himself characterized it.*

Applicant argues:

(a) "The inventor of the '984 reference has (in an affidavit) sworn that the mixing of particles into the described LCT resin would tend to, and be expected to, disrupt the crystalline structure and ruin the resin, especially the thermal properties. The inventor further swore (§ 6 of the 02-24-05 132 affidavit) that experiments were performed and that, in fact, these assertions of

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deleterious effects played out as shown by loss of the birefringence properties of the LCT epoxy...

(b) Despite this, the Examiner has substituted his own judgment in for what the Smith '984 reference is capable of (alone or in combination with Cook '183) and has flat out decided not to believe the inventor's assertions. On page 10, last full paragraph of the 05-19-05 final office action, the Examiner says that, "there is no factual evidence to support these assertions." However, the 1.132 affidavit from the '984 inventor is factual evidence."

In response to (a):

As stated in the obviousness rejection, the hybrid epoxy materials taught by Cook et al. represent an alternative to the standard practice of adding filler to resin systems in order to enhance properties. When combined with the teachings of Smith et al., the hybrid materials of Cook et al. would have served as an *alternative* to the addition of filler in Smith et al. because the hybrid materials integrate the aluminum into the chemical structure of the epoxy resin. Although the mixing of particles likely would have disrupted the crystalline structure of the LCT-resin, this appears to be a moot point in light of the combined teachings.

It should also be pointed out that the Inventor swore that, "By mixing the alumoxanes of Cook '183 with the LCT of Smith one would expect to get, and would in all likelihood end up with, a ruined LCT resin that has disrupted crystalline domains and phase separation with the added alumoxanes. This disruption in crystalline structure and phase separation would result in the degradation of the high performance properties of the LCT epoxy resin."

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As described above, the only difference between the reaction mechanism set forth in instant invention and the reaction mechanism set forth in Cook et al. is the presence of R (bivalent mesogen skeletal structure) vs. the presence of R' (bivalent generic skeletal structure). The alumoxanes used in Cook et al. are the same alumoxanes used in the instant invention.

Furthermore, the Applicant explicitly discloses in paragraph 0035 of the Specification that carboxylate-alumoxanes are reacted with the LCT-epoxy resins to form alumoxane-LCT-epoxies, wherein, "Examples of other LCT's can be found in US Pat. No. 5,904,984 (Smith et al.), which is incorporated herein by reference." If this sworn statement is indeed accurate, then it appears that the instant invention is also inoperable.

In response to (b):

It is not a matter of whether or not the Examiner believes the Inventor's assertions. The matter is that there is no *showing* of tests or experimental results that support these assertions. Due to the absence of *evidence* of inoperability of the prior art, Applicant's assertions constitute mere argument – *see MPEP 716.01(c)*.

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Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael J. Feely
Primary Examiner
Art Unit 1712

August 2, 2005

JUL-19-2005 TUE 10:48 AM Tighe Patton Armstrong

FAX NO. 2024542805

P. 01

TIGHE PATTON ARMSTRONG TEASDALE, PLLC
ATTORNEYS AT LAW

1747 PENNSYLVANIA AVENUE, N.W.
Third Floor
WASHINGTON, DC 20006-4604

TELEPHONE (202) 454-2800
FACSIMILE (202) 454-2805
www.tighepatton.com

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BRAD R. CLOSE
WRITER'S DIRECT DIAL: (202) 454-2867

EMAIL: bclosc@tighepatton.com

Addressee: Fax Center FAX NO. 703-872-9306
(INDIVIDUAL)

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(COMPANY)

From: Brad R Close Date July 19, 2005

Cover Sheet & 3 pages

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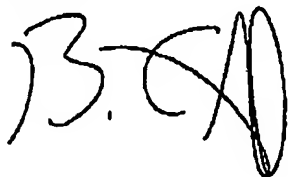
(1) Reply to a Final Office Action of 05-19-08

Certificate of Transmission 37 CFR 1.8

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at (703) 872-9306

Tuesday, July 19, 2005, By: Brad R Close

Signature:



10/618,111
July 18th, 2005
After Final Reply in response to Final of 05-19-2005

Via Facsimile

Appl. No. : 10/618,111
Inventor : Smith, James D
Filed : 07/11/2004
A.U. : 1712
Examiner : Feely, Michael J
Client Ref: 2003P08574US

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Commissioner for Patents
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After Final Reply

Sir:

In response to the Final Office Action of May 19th, 2005, please consider the following:

Remarks/Arguments begin on page 2 of this paper.

10/618,111
July 18th, 2005

After Final Reply in response to Final of 05-19-2005

Via Facsimile

Remarks

In response to the 05-19-05 final office action, applicant respectfully traverses the examiner's rejections of claims 1-19. Two issues appear to be at the heart of the disagreement and applicant address them in turn.

Examiner's citing of the omnibus phrase in Cook '183 as being valid and irrefutable is a mischaracterization of the overly-broad statement. Cook '183, in column 12 line 16 states "any commercially available epoxy resin can be used to prepare the (mixture)."

Certainly any commercially available resin can't be substituted, and Cook '183 simply can't be enabling for every commercially available resin just by making this broad statement. And *even if* one were to assume that Cook '183 can be combined with Smith '984, the combination would produce a resin without the crystalline structure of the LCT resin presently claims (and without the thermal properties limitations added to the claims in the last amendment that reflected this). "The disclosure in an assertedly anticipating reference must provide an enabling disclosure of the desired subject matter; mere naming or description of the subject matter is insufficient, if it cannot be produced without undue experimentation." *Elan Pharm., Inc. v. Mayo Foundation, MPEP 2121.01*.

In addition to that, the LCT were not commercially available at the time of Cook '183 and therefore, even if the omnibus assertion in Cook '183 was accurate at the time it was made, it still does not apply to LCT resins.

The other issue at hand is the argument that the Examiner has characterized the LCT resin of Smith '984 contrary to how the inventor of the '984 reference has himself characterized it. The inventor of the '984 references has (in an affidavit) sworn that the mixing of particles into the described LCT resin would tend to, and be expected to, disrupt the crystalline structure and ruin the resin, especially the thermal properties. The inventor further swore (¶ 6 of the 02-24-05 132 affidavit) that experiments were performed and that, in fact, these assertions of deleterious effects played out as shown by loss of the birefringence properties of the LCT epoxy.

10/618,111

July 18th, 2005

After Final Reply in response to Final of 05-19-2005

Via Facsimile

Despite this, the Examiner has substituted his own judgment in for what the Smith '984 reference is capable of (alone or in combination with Cook '183) and has flow out decided not to believe the inventor's assertions. On page 10, last full paragraph of the 05-19-05 final office action, the Examiner says that "there is no factual evidence to support these assertions." However, the 1.132 affidavit from the '984 inventor is factual evidence.

Applicant also points out parallels between the present situation and *Wiggins* as described in MPEP 2121.02.

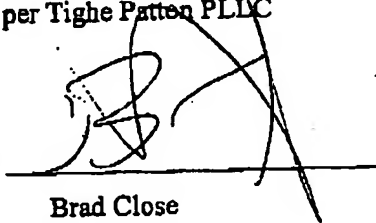
Lastly, in the final paragraph of page 10 of the 05-19-05 final office action, the Examiner draws a connection between Fig. 10 of Cook '183 and figures on page 9 of the pending application. However, these two chemicals are not the same, for example, there are additional atoms/groups between the phenyl groups of Cook '183 and not in applicants invention. These differences have enormous impact on cure reactivities of the neighboring oxirane groups and the expected and actual results.

Respectfully submitted,

Siemens Westinghouse

per Tighe Patton PLLC

by


Brad Close

L-0226

tel: 202-258-8503